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Use of Standard Labor Costs in the Manufacture of Men's Clothing

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Editorial Department Note

This issue of the bulletin belongs to that group of our publications dealing with special industries. As indicated by its title, it treats only of accounting for direct labor costs in connection with the manufacture of men's ready to wear clothing and in this limited scope, it emphasizes the method of checking labor costs by means of standards. Here, then, is a paper which shows the service which accounting must always render to management if it justifies its chief function, viz., that of serving as a tool of management. Here, also, is seen an application of the method of standard costs in the control of the labor element in manufacture.

The author, E. C. Robertson, has had wide experience in scientific management and has established a fine system of production and cost control in the clothing industry. When asked for biographical data, he said: "I started out to be a mechanical engineer, and before I had progressed very far in industry, I became impressed with the growing need of combining a knowledge of practical shop management with engineering or designing work. I was very fortunate in coming in contact many years ago with Mr. Carl G. Barth, who was then one of the leading exponents of the Taylor system. After completing my engineering education at Drexel Institute in Philadelphia, I was associated for several years with Mr. Barth in various system installations that he was making and thereby adding to my training for management work.

"In 1915 I became factory manager of a large vacuum cleaner company in Cleveland and during the war was in charge of certain phases of production work in connection with aircraft production for the government. In 1920 I was persuaded to attempt the application of the principles of scientific management to the clothing industry and came to Rochester to do work for L. Adler Bros. & Co., and in January, 1923, I came with the Hickey-Freeman Co. to supervise the installation of their system and also later to take charge of production."

Mr. Robertson is a member of the American Society of Mechanical Engineers, the American Management Association, and the National Association of Cost Accountants. This paper is based on a talk given given by him before our Rochester Chapter.

USE OF STANDARD LABOR COSTS IN THE MANUFACTURE OF MEN'S CLOTHING

It is safe to say that anyone who has really looked into the subject, will agree with the statement that accurate cost keeping by individual operations is an expensive procedure and of questionable value. In repetitive manufacture this latter part of this statement is especially true, because usually the operation costs are obtained so much later than the actual work is performed, that their real value is largely historical. It was from this viewpoint, coupled with a desire to keep down the overhead, that the Hickey-Freeman Company of Rochester, N. Y. devised the method of standard costs which will be described in this paper.

The Hickey-Freeman Company manufactures only the highest quality of men's ready-to-wear clothes. It is evident, therefore,

that its product consists of many different models of suits and overcoats made up in varying styles of cloth in accordance with the retailer's requirements. The making up of some twenty-five different suit models in any one of five or six hundred styles of cloth, with the use of over two hundred different operations, necessarily involves so many possible combinations that the cost of obtaining detailed operation costs is prohibitive. On the other hand, the very fact that so many operations are involved requires some kind of a check, else a small loss on each or many of these operations might easily turn profits into serious losses.

Any method of checking through a cost system or other device, must deal with the three fundamentals of manufacturing, i. e., overhead, material and direct labor. So far as overhead is concerned we shall dismiss it from this article with the statement that happily it is much the smallest of the three and that it comes in for plenty of scrutiny by many responsible heads. As to material it is comparatively simple to control. All woolen purchases are made well in advance of their use and at definite prices. Therefore, the various cloths can be grouped into ranges with averaged prices, and the cutting up is done in lengths or "yardages" which are predetermined, based on actual trial lays of the different models.

The direct labor, however, is, for several reasons, a real problem. One reason for this arises out of the many operations referred to in the previous paragraph; another reason from the high quality of garment produced, which requires many more hand operations than the average ready-to-wear garment, and many operations which cannot be put on piece-work for fear of jeopardizing the quality; and still another reason arises from the fact that many different shops are involved.

For all of these reasons the Hickey-Freeman Company uses an organization plan whereby quality, which always comes first, is insured, and at the same time production at a proper cost is safeguarded. Under this plan each shop has a dual organization, one part of which is responsible for quality only, the other for production and the keeping of records.

The quality force, consisting of carefully trained and selected persons and headed by a quality foreman, is equipped with complete specifications covering all operations and is held strictly responsible for their enforcement. The production force, operating a routing or despatching system whereby the proper flow of production is obtained and all work is put through according to a pre-determined sequence of operations, is held responsible under a production foreman for the actual production, together with all clerical work necessary. The division of responsibility for shop management between these two forces is therefore clear and distinct, although good co-operation must of course always exist between them.

Reference has been made to the number of shops involved.

There are separate shops for coats, pants, vests, and overcoats, and in large establishments usually more than one of each kind of shop. Each shop is run as an independent unit. That is, each shop is furnished the cut parts of woolens and trimmings and the necessary thread, buttons, etc., and proceeds to make up its own particular product. The work comes to the shops grouped together in small quantities based on the individual customer's require-

Shaper No.	Shop	Lot	Quan.	Mfg. No.
124	C	1250	5	5705 A

Model Coat: PICCADILLY
Coat Lined: 1/4 ALP
Shoulder Pad: No. 800
Style: 3 butt. soft front sack

Model Vest: 5
Buttonholes: 5
Bucklestraps: Yes
Vest Shop:

Edges: S S 1-16"
Coat Seams: Plain

Sleeves: 3 1-2" open vent 2 butt.
Back: Center vent

Pockets: 2 lower flaps 2 1-4"
Outside breast welt 7-8"

Silk: BLACK
Lining: 100

Coat Special Instructions: S. B. No. 11

Vest Special Instructions:

Labels: HICKEY-FREEMAN CO. ON COAT
INSIDE VEST LINING ON VEST

Pant	Shop	Lot	Quan.	Mfg. No.
SHORT 19	C	1250	5	5705 A

Seams: PLAIN
Silk: BLACK
Labels: HICKEY-FREEMAN CO. ON WATCH PKT.
Special Instructions: 2¼" Belt Loop

Lot	Quan.
1250	5

Model: 124 PICCADILLY
Coat Lined: 1/4 ALP
Canvas: S. B. No. 11
Buttons: ST 15/30 2024
VEST 25/24
Inside Lining Pant and Vest: BEL P
Sleeve Lining: 10

Cost No.	Lot No.	Quan.
516	1250	5

PICCADILLY
5705 A (SHORT)

33	
34	
35	1
36	1
37	1
38	1
39	1
40	
42	
44	
46	
48	
50	

FIG. 1. MANUFACTURING ORDER.

ments. For each group of work the shop must receive a manufacturing order (see Figure 1) showing how to make up the specific garments. The shops take these orders and after grouping together whatever orders they can to facilitate despatching, they make out the necessary routing or despatching cards (See Figure 2) and start the work on the first operation.

The despatching cards, in addition to giving the sequence of the operations, show a symbol for each operation, the quantity in that bundle of work, and the bundle number. In other words, these cards, besides indicating at all times the progress of the work, are the authority for paying for that work.

This brings us to the worker's time card. This is a daily card (See Figure 3) and acts as both an attendance card and a job card. On it the despatching clerk records any lateness or early leaving, and all issues of work to the worker. The elapsed time for each issue of work is recorded together with its operation symbol, the bundle number of this issue, and the quantity in the bundle. At the close of the day a summary is made at the bottom of the card, accounting for the full number of working hours each day, in terms of work by types of operations, quantities and time, and any lateness, absence or idleness.

The card is then sent to the payroll office to be checked and to have the worker's earnings extended. When the earnings have been extended, the summary at the bottom of each time card is complete; that is, it shows an analysis of the worker's daily effort in terms of operations performed, the total time and quantity of each, and the amount to be paid for each, together with the total daily earnings. It is apparent, therefore, that after collecting the total earnings for payroll purposes, it is also possible to collect the total operations costs, if and when desirable.

It is at this point that the use of standard costs is introduced. A standard cost may be defined as a pre-determined cost which is considered proper, such as a piece rate. In the same way a standard cost for a day work operation is one computed by time studies and previous experience. Hence, lists of standard costs for all operations performed can be made up and furnished to the payroll department. Then all that is necessary, in order to compare standard costs with actual, is to indicate the standard cost of each operation performed along with the actual cost as a part of the payroll department procedure.

In order to facilitate this a posting sheet is used for each employee (See Figure 4) and is so arranged that each day entries are made across the sheets under headings corresponding with the various headings used in summarizing the daily time cards. Under each heading (or operation symbol) are indicated quantity, time, earnings, and standard cost for that quantity. At the end of the week the entries for the six days are totalled by headings and then the cross totals represent the week's earnings for all employees for any shop and the week's standard costs for that shop.

JAN. 15-1926
C1133
BUNDLE NO. 1687
QUANTITY 15
PART SLEEVE
MODEL PLAIN SEAM REGULAR.

MODEL — PLAIN SEAM REGULAR.	PART SLEEVE	QUANTITY 15	BUNDLE NO. 1687

OPERATION	PIECE WORK	SYMBOL	EMP. NO.	DATE FINISHED
SERGE SLEEVE SEAMS		CS1		
JOIN INSEAM		CS2A		
PRESS OPEN INSEAM		CS3A		
BASTE WIGGAN		CS4A		
MAKE HEM & VENT		CS5		
PRESS CUFFS		CS6		
JOIN ELBOW SEAM		CS7A		
PRESS ELBOW SEAM		CS8A		
MAKE & ASSEMBLE LINING TO SLEEVE		CA7		
BASTE LINING TO SLEEVE		CS11A		
FELL SLEEVE BOTTOM		CS12A		
TRIM SLEEVE LINING		CS13		
SPECIAL INSTRUCTIONS			MFG NOS 1345A	

FIGURE 2. DESPATCHING CARD.

"KEEP THE QUALITY UP"

C1133 JAN. 15-1926

IGNACZ GAC

	EL. TIME	QUAN.	OP. SYM.	BDLE NO.
9.0	1.0	overtime		
8.0	2.8	7		2074
		5		2071
		7	CF6A	2068
5.2	5.2	1		2080
		7		2074
		6		2073
		6		2072
0.00		5	CF11A	2071

LATE	HRS.	QUAN.	SYM.	EARN.
0.00	5.2	25	CF11A	3 71
TOT. EARN.	3.8	19	CF6A	3.23
7.37	.5	overtime		43
"SAFETY FIRST"	9.5			

Form P 10

FIGURE 3. WORKER'S DAILY TIME CARD.

A figure showing the total labor cost for that shop together with a standard labor cost is therefore immediately available. By establishing a proper percentage for the difference permissible between the actual and the standard which still will permit of profitable performance a control figure can easily be established. At the same time reference to the individual posting sheets permits of gathering together any specific operation costs which may be desired.

If labor saving machines, such as tabulating machines or the special types of cash registers, are available, a further payroll analysis may easily be made. This is done by the Hickey-Freeman Company by the use of a cash register. Every payroll is analyzed to show the total piece work performed weekly, the total day work, the totals of guarantee accounts, such as payment for idle time, the amount of overtime, and all miscellaneous work performed which is properly coded in the shops when it occurs. This analysis has proven very valuable in the profitable management of the shops and at the same time has eliminated the so-called operations cost department. A typical analysis for one shop is as follows:

PAYROLL FOR SHOP "C" FOR WEEK ENDING 1-18-'26.

	Amount	Hours	
Piece work	$8,285.90	10,972.9	
Hour work	1,661.70	2,573.8	
Prod. standard	1,699.91	2,191.5	
100% work	187.68	289.2	
Payment for idle time.	34.14	69.1	
Overtime premium ..	85.48	16,216.7	worked hours
Adjustments for shortages	20.64	120.2	overtime premium hours
Back pay	33.62		
Retainers	31.93	117.1	laid off hours
	$12,041.00		

The first four items in this analysis represent money actually spent directly on operations and they are further analyzed to show as follows:

	Actual Costs	Standard Costs
Piece work	$8,271.82	$8.271.72
Hour work	1,492.73	1,287.49
Prod. standard	1,639.25	1,639.25
100% work	158.85	75.21
Totals	$11,562.65	$11,273.77

FIGURE 4. WEEKLY POSTING SHEET

C1133

FIGURE 4. WEEKLY POSTING SHEET

C1133

IGNACZ GAC

DATE	TOTAL HOURS	TOTAL AMT	OPER SYS	CF11A CLASS R.W.				OPER SYS	CF6A CLASS H.W.				OPER SYS	overturn CLASS 6			OPER SYS	CLASS			OPER SYS	CLASS		
			QUAN	HRS	AMT		STAN	QUAN	HRS	AMT		STAN	QUAN	HRS	AMT	STAN	QUAN	HRS	AMT	STAN	QUAN	HRS	AMT	STAN
1-12-26	9.5	6.24	22	6.0	3.26			25	3.0	2.55		2.43		.5	.43									
1-13-26	8.0	6.67	14	2.6	2.08			23	5.4	4.59		2.28												
1-14-26	9.5	8.08						49	9.0	7.65		4.85		.5	.43									
1-15-26	9.5	7.37	25	5.2	3.71			19	3.8	3.23		1.88		.5	.43									
1-16-26	4.0	4.15	28	4.0	4.15																			
1-18-26	9.5	6.07	38	9.0	5.64									.5	.43									
TOTAL	50.0	38.58	127	26.8	18.84			116	21.2	18.02		11.49		2.0	1.72									

DATE	TOTAL HOURS	TOTAL AMT	OPER SYS	CLASS				OPER SYS	CLASS				OPER SYS	CLASS			OPER SYS	CLASS			OPER SYS	CLASS		
			QUAN	HRS	AMT		STAN	QUAN	HRS	AMT		STAN	QUAN	HRS	AMT	STAN	QUAN	HRS	AMT	STAN	QUAN	HRS	AMT	STAN
TOTAL																								

These figures indicate that actual operation costs should have been $11,273.77 for the week, provided the standard was met in every case and that nothing but actual operations were performed. The actual cost, however, was the total payroll or $12,041.00. The difference of $767.23, which is approximately 6.3% of the total, is the control figure previously mentioned. For example, if 8% difference will permit a shop to break even, anything less than that must indicate a good condition in the shop. As to the money difference of $767.23, this can be analyzed in as much detail as may be desired. Some of it shows as a loss on hour work. Some is a loss on 100% work, i.e., on work where a worker is guaranteed his wage when used on an operation other than his regular one. Some of it is the money paid for fixing work that may have been unavoidably damaged while in process.

In comparing the Actual Costs totals with the Payroll totals, differences in them will be noticed. For instance, the total piece work is $8,285.90, and the Actual Costs piece work is $8,271.82. This difference of $14.08 is piece work done by this shop for some other shop and will be charged to that shop. In like manner explanations of all other differences are available, the rule being that all money spent for direct labor in any shop must be accounted for by that shop through the medium of the daily time cards.